REMARKS

Claims 1-47 are pending in this application. Claims 27-31 are allowed. Claims 9, 12, 14, 26, 39, 40, and 43-47 are indicated to be allowable, subject to objection. Claims 1-8, 10, 11, 13, 15-25, 32-37, 41, and 42 are rejected. None of the claims are currently amended. Reconsideration and further examination are respectfully requested.

Before analyzing the rejections in detail, a review of the subject matter of this application may be helpful. As described in the Specification at page 7, a core optical network may be used to interconnect user end-systems which are part of enterprise networks. In practice, the core optical network will typically be controlled by a communications service provider such as Verizon, MCI, Qwest, and the like, while the user end-systems will typically be controlled by an enterprise such as Nortel, IBM, EMC and the like. The core optical network is engineered to carry large traffic loads, and will include robust failover techniques because the adverse consequences of data loss can be significant. However, as stated in the specification, "recovery by the core optical communication network does not involve the user end-systems, and is typically transparent to the user end-systems."[1] This is problematic when the failure or degradation affects the links to the user end-systems, or the user end-systems themselves, because such failure or degradation is not protected by the core network. Hence, the problem to which the invention is directed is protection against failure or degradation of the links to the user end-systems and the user end-systems themselves. At pages 37-39 of the specification, an **alternate site** switching technique is taught for providing protection in response to failure or degradation of the link to the user end-system or the user end-system itself.

[1] Specification, page 7, lines 21-23

Claims 1, 3, 4, 11, 15, 18, 20, 21, 32, 34, 35, 36, and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by *Gerla*, which generally describes fault tolerant PON topologies. As correctly characterized by the Examiner, Gerla teaches redundant tree calculation for alternate paths in the cited passages. The Examiner specifically cites page 0051, section 3, of *Gerla* for the teaching that "a station can reach the root of the tree via two separate links," where the first link is the primary and the second link is the backup. However, that is not what is recited in the claims. The claims recite primary and backup end systems, rather than primary and backup links. The Examiner implicitly acknowledges this difference, but asserts that a link is equivalent to an end system. Applicant respectfully traverses. As those terms are customarily used and understood in the art, a link is not equivalent to and end system. Rather, a link is a communication path between nodes, whereas an end system is a node or network of nodes. This distinction is illustrated in Figures 28 and 29 of this application, where end systems outside the core network cloud are shown in communication with core network nodes by links. Taking the customary meaning of those terms into consideration, *Gerla* teaches how to calculate an alternate path to the **same destination** for use during failure, whereas the presently claimed invention recites that a path to a **different destination** is designated. This distinction is recited in claim 1 as "designating at least one backup end-system to back up the primary end-system." Claims 18 and 32 recite limitations which distinguish *Gerla* for the same reason.

Claim 1 further distinguishes *Gerla* by reciting a network where a plurality of user end-systems are interconnected by a protected optical network, where the optical network protection does not extend to the user end-systems, and where the end systems protect themselves in response to detection of degradation or failure affecting the primary end-system, but not the optical network. *Gerla* makes no distinction between user end-systems and an optical network

having distinct protection schemes. Rather, *Gerla* is simply directed to protection of a single PON, as shown at pages 0051-0052. Because *Gerla* considers protection of the PON as a single network, *Gerla* fails to teach a solution for dealing with a separate interconnecting network, i.e., the core network, that is neither part of the failure nor responsible for protection of the degradation/failure. In contrast, the presently claimed invention recites failover trees generated by signaling through the optical network **so that the end-systems can protect themselves**. This distinguishing limitation is recited in claim 1 as "upon detection of the degradation or failure affecting the primary end-system, switching traffic from forwarded by the protected end-system to the primary end-system to one of said at least one backup end-system using the failover tree." Similarly, claim 18 recites a "failover tree construction logic operably coupled to construct a failover tree to the at least one backup end-system prior to detection of actual failure or degradation of the primary end-system." Similarly, claim 32 recites "wherein each end-system interfaces with the optical communication network through a corresponding optical edge node, and wherein a failover tree is constructed to the at least one backup end-system prior to a detection of a failure of the primary end-system, and traffic is switched from the primary end-system to a backup end-system upon detecting a degradation or failure affecting the primary end-system." Withdrawal of the rejections of claims 1, 18 and 32 is therefore again requested.

Claims 2, 19 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Gerla* in view of US 5914798 ("*Liu*"). *Liu* is cited by the Examiner for teaching receipt of a setup request from the protected end-system specifying the at least one backup end system. However, as with *Gerla*, the Examiner cites a teaching (at Fig. 7, 803) of an **alternate path** rather than an **alternate end system**. The difference between a path and an end system has already been discussed above. Because of that difference, *Liu* fails for the same reasons as *Gerla* to teach a

solution to the problem of protecting against failure or degradation of the links to the user end-systems and the user end-systems themselves. Indeed, *Liu* is clearly directed to protection against core network failures as evidenced by the role of the OSS and the bandwidth of the links described relative to current Enterprise requirements, and fails to describe a separate intervening core optical network. The presently claimed invention therefore distinguishes the cited combination for the same reasons, and with the same claim language, cited above with regard to *Gerla* alone.

Claims 2-8, 10, 11, 13, 15-17, 19-25, 33-37, 41, and 42 are dependent claims which further distinguish the invention, and which are allowable for the same reasons as their respective base claims. Claims 27-31 have already been allowed, and claims 9, 12, 14, 26, 39, 40, and 43-47 were indicated to be allowable, subject to objection. Allowance of claims 1-47 is therefore requested.

For these reasons, and in view of the above amendments, this application is now considered to be in condition for allowance and such action is earnestly solicited. Should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone the undersigned, Applicants' Attorney at 978-264-4001 so that such issues may be resolved as expeditiously as possible.

Respectfully Submitted,

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Date

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